AMENDMENTS TO THE SPECIFICATION

In the specification in the section DETAILED DESCRIPTION OF THE INVENTION, please delete the amended second paragraph as shown with strike-through and substitute with a new paragraph presented below immediately after the strike-through version.

~~The invention provides a novel sensor and a novel methodology that overcomes limitations of the conventional fluorescence sensing. The invention implements a measurement of plasmon enhanced multi-band fluorescence for analyte identification in fluorescence sensing. Current fluorescence sensing is based on a measurement of a single-band fluorescence, a fundamental principle of molecular fluorescence known as Kasha rule (M. Kasha, "Characterization of electronic transitions in complex molecules", *Discuss. Faraday Soc.*, 8, 14 (1950)). According to the Kasha rule, a fluorophore in the condensed phase emits a *single-band spectrum* from its lowest singlet excited state (LES), due to the vibrational relaxation and non-radiative dissipation of excitation energy. Natural emission rate for a fluorophore ($< 10^{9}$ s^{-1}) defined by fluorophore transient dipole puts a limit on a rate for fluorophore nonradiative decay of measured fluorescence.~~

The present invention relates to a new method of using plasmon-induced multiband spectral properties of molecules for optochemical sensing and molecular identification. In the proposed method, a plasmon-excited nanoparticle is capable of inducing a new characteristic multiband spectral property of a molecule, when the molecule is located within plasmon fields of the nanoparticle. The plasmon-induced multiband spectral property of the molecule is proposed to be used for optochemical sensing of an analyte and/or for molecular identification of the molecule and/or analyte. Some plasmon-

spectral bands of the molecule may have different sensitivity to the analyte than other bands, for example plasmon-induced spectral bands of higher excited states of the molecule are more sensitive to the surrounding environments than plasmon-induced spectral bands of the lower excited state of the molecule, therefore the proposed method in this invention allows to monitor each interaction of the analyte with the molecule. In addition, the plasmon-induced characteristic multiband of the molecule allows for better molecular identification of the molecule and/or the analyte.